

Fore tarsal comb well-developed, consisting of three bristles on basitarsus, and one each on the following two segments.

Forewing with distance from outer corner of second submarginal cell to apex of wing 1.1 times the width (1.2 times in *maurus*).

*Male*. Unknown.

*Paratypes*. 7 ♀♀; same data as type [MCZ, USNM]. 1 ♀; Columbia River near Vantage, Grant Co., Washington; August 27, 1954 (H. E. and M. A. Evans) [USNM]. The paratypes are 4.3 to 4.7 mm long, and agree in all significant details with the type.

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## Studies on the Phreaticolous Water Mites of North America: New or Unreported Genera of Mideopsoidea and Acalyptonotoidea<sup>1</sup>

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Collections<sup>2</sup> made in phreaticolous habitat, the so-called subterranean waters, in western North America during the summer of 1961 yielded new species of *Chappuisides* Szalay, *Uchidastygacarus* Imamura, and a new genus which is tentatively assigned to the family Mideopsidae. Holotypes and allotypes will be placed in the Chicago Natural History Museum.

### YACHATSIA new genus

*Diagnosis*: (based on male only) dorsal and ventral shields present; dorsal shield bearing four pairs of glandularia; first and second coxae projecting beyond the body proper; a ridge present on each side extending anterolaterally from the insertions of the fourth legs; fourth coxae touching medially for a relatively long distance (Fig. 7); genital field with three pairs of genital acetabula; gonopore of male very narrow; first and

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second acetabula elongated and lying in the opening of the gonopore; third acetabula rounded and excluded from the gonopore (Fig. 11); a pair of glandularia flanking the genital field; P-IV and P-V fused but suture line between them slightly indicated (Fig. 16); ventral side of P-IV without setal tubercles; legs unmodified; swimming hairs absent; claws present on all legs.

*Genotype: Yachatsia mideopsoides* n. sp.

*Discussion:* The new genus is tentatively placed in the Mideopsidae but the final decision must await the finding of the female. *Yachatsia* differs from *Mideopsis* in possessing a four-segmented palp, and in having the third pair of genital acetabula excluded from the gonopore (Fig. 11).

***Yachatsia mideopsoides* new species (Figs. 7, 8, 10, 11, 15, 16)**

*Male:* Ventral shield, including first coxae, 460  $\mu$  in length, 304  $\mu$  in width; ventral shield oval, first and second coxae projecting; tips of first and second coxae pointed, edges somewhat serrated; suture lines between coxae slightly indicated; capitular bay relatively small; fourth coxae touching medially for a relatively long distance (Fig. 7); fourth legs inserted slightly anterior to middle of body; a well-developed ridge present on each side extending anterolaterally from the insertions of the fourth legs; genital field with three pairs of genital acetabula, first and second pair elongated, third pair more or less rounded; gonopore slit-like, widening slightly in area of first and second pair of acetabula; third pair of acetabula lying at posterior end of genital field, excluded from the gonopore; two rows of setae and a pair of glandularia flanking the gonopore (Fig. 11); excretory pore lying on the ventral shield; dorsal shield oval, 418  $\mu$  in length, 269  $\mu$  in width; dorsal shield bearing four pairs of glandularia; a pair of longitudinal depressions extending posteriorly from the region of the postocularia.

Dorsal lengths of the palpal segments: P-I, 15  $\mu$ ; P-II, 28  $\mu$ ; P-III, 19  $\mu$ ; P-IV and P-V fused, combined length 52  $\mu$ ; suture line between P-IV and P-V slightly indicated (Fig. 16); P-IV portion 31  $\mu$  in length, P-V portion 21  $\mu$  in length; setal tubercles absent from P-IV portion; P-V portion with a large, curved

dorsal seta; Figure 16 illustrates the chaetotaxy of the palp; capitulum (Fig. 8)  $62\ \mu$  in length; dorsal lengths of the distal segments of the first leg: I-Leg-4,  $52\ \mu$ ; I-Leg-5,  $62\ \mu$ ; I-Leg-6,  $76\ \mu$ ; Figure 15 illustrates these segments; none of the legs modified; swimming hairs absent on all legs.

*Female*: Unknown.

*Types*: Holotype, adult male, taken in a sand and gravel bar in Ten Mile Creek approximately seven miles south of Yachats, Lane Co., OREGON, August 13, 1961.

*Discussion*: See discussion under generic description.

### **Chappuisides eremitus** new species (Figs. 1, 2, 9, 13, 14)

*Female*: The specimen to be described is newly metamorphosed and sclerotization of the dorsal and ventral shields is probably not complete. The two small sclerites, each bearing a pair of long setae, which flank the excretory pore, would probably have been incorporated into the completed ventral shield. Ventral shield, including first coxae,  $692\ \mu$  in length,  $562\ \mu$  in width; first and second coxae projecting, capitular bay more or less V-shaped; first coxae fused medially, suture line between them obliterated; a curved ridge present on each side extending anterolaterally from the insertions of the fourth legs; a pair of glandularia at medial end of suture lines between third and fourth coxae; posterior portion of fourth coxae separated into a genital bay; well developed flaps present which cover attachments of fourth legs as seen in ventral view; genital field obovate, much narrower anteriorly (Fig. 1); genital field  $155\ \mu$  in length,  $117\ \mu$  in width; three pairs of genital acetabula present, these lying in posterior two-thirds of gonopore; genital field flanked by three or four small setae; excretory pore fused with the ventral shield; setal plates flanking the excretory pore free in the integument in this specimen, but probably fused with ventral shield in fully sclerotized specimens; dorsal shield  $654\ \mu$  in length,  $471\ \mu$  in width; dorsal shield bearing four pairs of glandularia; setae of dorsum very long (Fig. 2); pigmented eyes present; integument without pigment.

Dorsal lengths of the palpal segments: P-I,  $14\ \mu$ ; P-II,  $55\ \mu$ ;

P-III,  $26\ \mu$ ; P-IV,  $55\ \mu$ ; P-V,  $29\ \mu$ ; lateral side of P-II with three long setae; distoventral portion of P-IV drawn out into rounded projection to form an uncate palp (Fig. 14); capitulum (Fig. 9)  $114\ \mu$  in length; dorsal lengths of the distal segments of the first leg: I-Leg-4,  $104\ \mu$ ; I-Leg-5,  $124\ \mu$ ; I-Leg-6,  $142\ \mu$ ; Figure 13 illustrates I-Leg-5 and 6; swimming hairs absent.

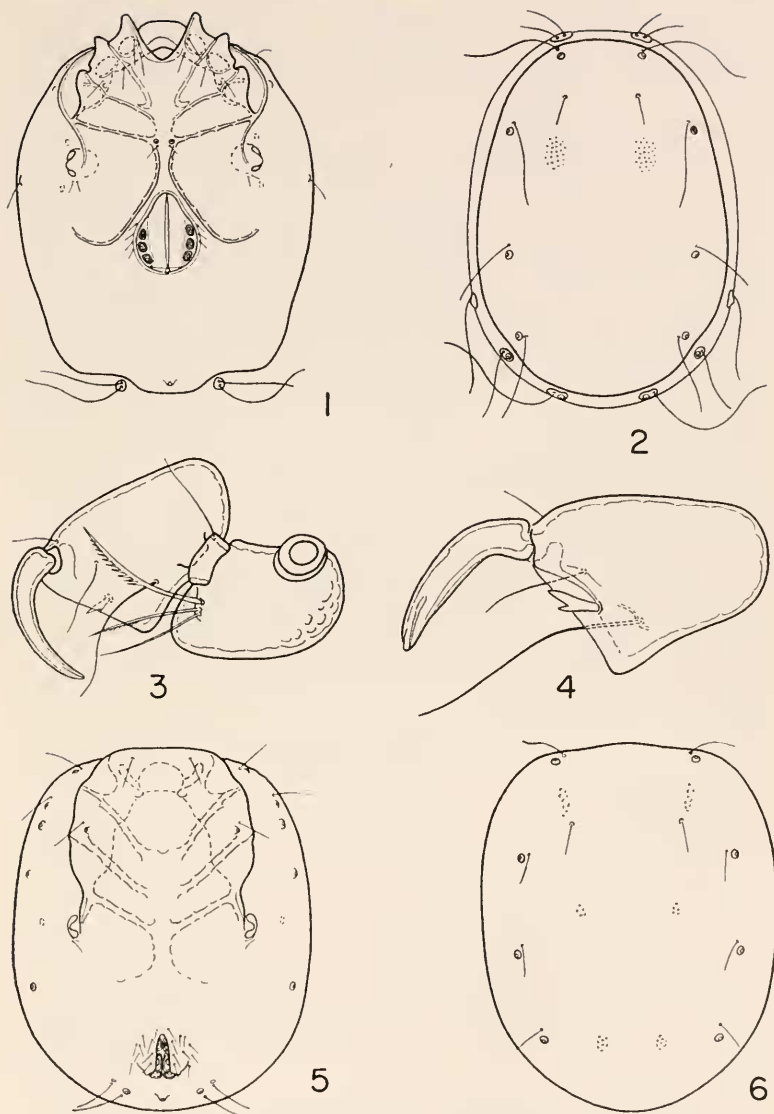
*Male*: Unknown.

*Types*: Holotype, adult female, collected in a sand and gravel bar in the Gibbon River above Virginia Cascades, Yellowstone National Park, WYOMING, September 1, 1961.

*Discussion*: Three species of *Chappuisides* have previously been reported from the ground waters of Europe. *C. hungaricus* was named by Szalay (1943) from specimens collected in Roumania. Schwoerbel (1959) states that this species is also known from Switzerland, the Pyrenees region, and Germany. A second species, *C. ellipticus*, was described by Walter (1947) from Switzerland, and a third species *C. thienemanni* was described by Motas (1959) from Roumania. The North American species resembles *C. thienemanni* in the narrowing of the anterior end of the gonopore. The new species differs in having the anterior portion of the gonopore even more narrowed, possessing smaller genital acetabula which do not extend as far forward in the gonopore, and in having a more or less V-shaped capitular bay.

***Uchidastygacarus imamurai* new species (Figs. 3, 4, 5, 6, 12)**

*Male*: The measurements of the paratype male are given in parentheses following the measurements of the holotype. Ventral shield  $494\ \mu$  ( $441\ \mu$ ) in length,  $403\ \mu$  ( $380\ \mu$ ) in width; coxal area extending slightly anterior to the body proper; coxae not forming a capitular bay, but there is a camerostome dorsal to the first coxae; lateral edges of the coxae subparallel (Fig. 5); genital field  $59\ \mu$  ( $54\ \mu$ ) in length; three pairs of genital acetabula lying in the gonopore; first and second pairs of acetabula elongated, third pair more or less rounded and lying at extreme posterior end of genital field; numerous setae flanking



## EXPLANATION OF PLATE I

*Chappuisides eremitus* n. sp. Female. Fig. 1, ventral view; Fig. 2, dorsal view.

*Uchidastygacarus imamurai* n. sp. Male. Fig. 3, palp, male; Fig. 4, P-IV and P-V, male; Fig. 5, ventral view, male; Fig. 6, dorsal shield, male.

the gonopore; excretory pore lying on the ventral shield; dorsal shield  $494\ \mu$  ( $438\ \mu$ ) in length,  $395\ \mu$  ( $364\ \mu$ ) in width; dorsal shield somewhat truncate at anterior end and bearing four pairs of glandularia (Fig. 6).

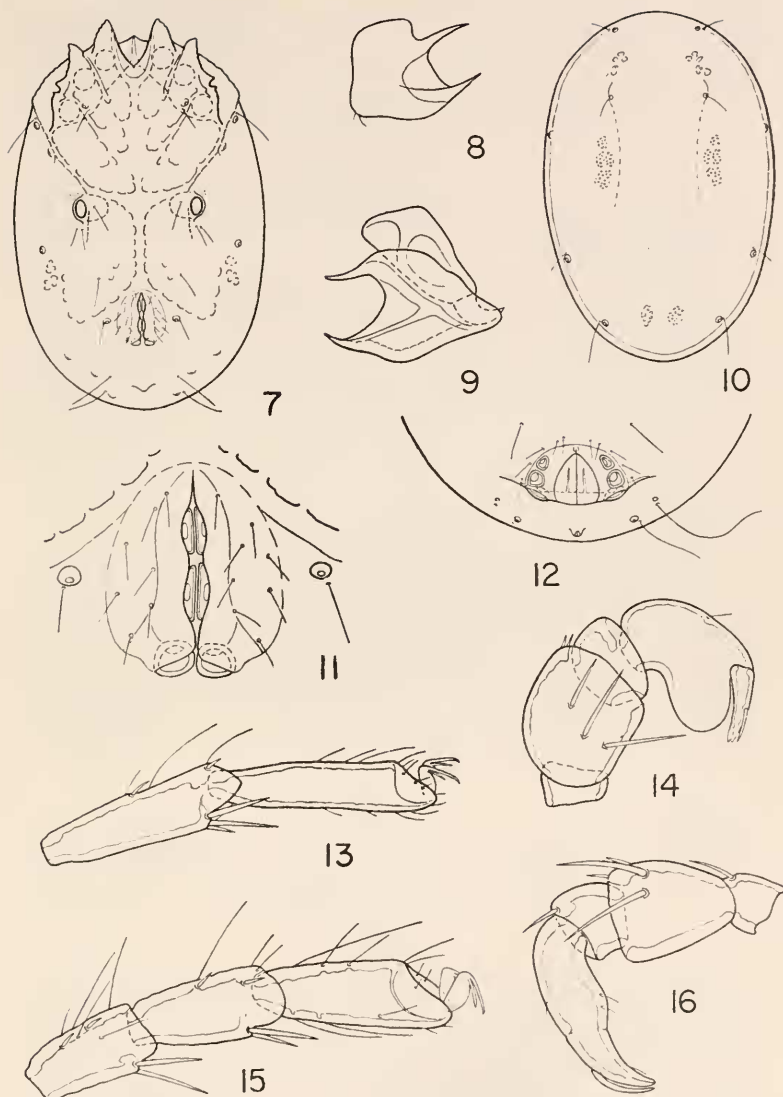
Palp highly modified; P-II and P-IV flattened; palp attached dorsally to the capitulum; measurements difficult because certain palpal segments are foreshortened regardless of orientation of palp on slide; P-I and P-III very small; P-II,  $69\ \mu$  ( $66\ \mu$ ) in length; P-IV,  $87\ \mu$  ( $83\ \mu$ ) in length; P-V,  $62\ \mu$  ( $64\ \mu$ ) in length; P-II with three long setae at distal end, two of these pectinate on one side (Fig. 3); P-IV more or less triangular, with a short, heavy, bifid seta near distal end (Fig. 4); all legs shorter than body; dorsal lengths of the distal segments of the first leg: I-Leg-4,  $46\ \mu$  ( $40\ \mu$ ); I-Leg-5,  $62\ \mu$  ( $55\ \mu$ ); I-Leg-6,  $86\ \mu$  ( $70\ \mu$ ); dorsal lengths of the segments of the fourth leg: IV-Leg-1,  $62\ \mu$  ( $52\ \mu$ ); IV-Leg-2,  $53\ \mu$  ( $45\ \mu$ ); IV-Leg-3,  $48\ \mu$  ( $42\ \mu$ ); IV-Leg-4,  $57\ \mu$  ( $54\ \mu$ ); IV-Leg-5,  $76\ \mu$  ( $60\ \mu$ ); IV-Leg-6,  $72\ \mu$  ( $59\ \mu$ ); tips of IV-Leg-6 ending in a seta  $57\ \mu$  ( $48\ \mu$ ) in length; swimming hairs absent.

*Female* (based on a newly metamorphosed individual): Length of body  $525\ \mu$ , width  $418\ \mu$ ; dorsal shield and ventral shield, except for genital field, similar to that of male; width of genital field  $110\ \mu$ ; three pairs of genital acetabula present, these lying on a sclerotized ring which is fused with the ventral shield (Fig. 12).

Palp and legs similar to male; P-II,  $76\ \mu$  in length; P-IV,  $91\ \mu$  in length; P-V,  $62\ \mu$  in length.

*Types*: Holotype, adult male, collected in a gravel bar in the Swan River approximately six miles southeast of Bigfork, Lake Co., MONTANA, August 25, 1961; Allotype, newly metamorphosed female, same data as holotype; Paratype, one male, collected in a sand and gravel bar in Ten Mile Creek approximately seven miles south of Yachats, Lane Co., Oregon, August 13, 1961.

*Discussion*: Five species of *Uchidastygacarus* have been previously described, all by Imamura (1956, 1959a, 1959b, 1961) from various localities in Japan. The North American species most closely resembles *U. akiyoshiensis* Imamura in its posses-



## EXPLANATION OF PLATE II

*Yachatsia mideopsoides* n. gen. n. sp. Male. Fig. 7, ventral view; Fig. 8, lateral view of capitulum; Fig. 10, dorsal shield; Fig. 11, genital field; Fig. 15, distal segments of first leg; Fig. 16, palp.

*Chappuisides eremitus* n. sp. Female. Fig. 9, lateral view of capitulum; Fig. 13, I-Leg-5 and 6; Fig. 14, palp.

*Uchidastygacarus imamurai* n. sp. Female. Fig. 12, Posterior end of ventral shield, female.



sion of a heavy, bifid seta near distal end of P-IV. *U. imamurai* differs in having the coxal area narrower, two pectinate setae at the distal end of P-II rather than three pectinate setae, and differs in proportions of the leg segments.

## REFERENCES

- IMAMURA, T. 1956. Some subterranean water-mites from Hyogo Prefecture, Japan. Publ. Prem. Congr. Intern. Speleol., Paris, 1953. 3(3): 193-214.
- 1959a. Water-mites (Hydrachnellae and Porohalacaridae) from the subterranean waters of Akiyoshi-dai Karst, Japan. Jap. Jour. Zool. 12: 251-255.
- 1959b. Water-mites (Hydrachnellae) of subterranean waters in Kanto District, Japan. Acarologia 1: 426-451.
1961. Water-mites (Hydrachnellae), mainly in subterranean waters, from the Ryu-kyu Islands. Ibid. 3: 48-59.
- MOTAS, C. 1959. Descrierea a trei Hidracarieni noi. Acad. Rep. Pop. Romine (Extras 1959): 473-498.
- SCHWOERBEL, J. 1959. Zur Kenntnis der Wassermilbenfauna des südlichen Schwarzwaldes (Hydrachnellae, Acari). 5 Beitrag: Wassermilben aus dem Grundwasser. Mitt. bad. Landesver. Naturkunde u. Naturschutz N. F. 7: 323-330.
- SZALAY, L. 1943. Die erste Wassermilbe (Hydrachnellae) aus unterirdischen Gewässern in Ungarn. Zool. Anz. 142: 45-51.
- WALTER, C. 1947. Neue Acari (Hydrachnellae, Porohalacaridae, Trombididae) aus subterranean Gewässern der Schweiz und Rumäniens. Verh. Naturf. Ges. Basel 58: 146-238.

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## A New Neotropical Subgenus of *Campsomeris* (Hymenoptera: Scolidae)

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Prof. Bradley (1957) placed his *Campsomeris tenebrica* in the subgenus *Laevicampsomeris* Betrem, 1933. Some important differences exist between the specimens that I have seen that belong to this species (4 ♀ Minas Geras, Brasil 1907 ex coll. Vogt 1960, M. Amsterdam and the typical material) and the

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